INDUSTRY CIRCULAR

OFFICE OF THE COMMISSIONER OF INTERNAL REVENUE
ALCOHOL AND TOBACCO TAX DIVISION

WASHINGTON 25, D. C.

Industry Circular No. 58-31

November 12, 1958

SPECIALLY DENATURED ALCOHOL FORMULAS

Proprietors of denaturing plants and others concerned:

Purpose. The purpose of this industry circular is to advise you of variations in the quantities of denaturants used in specially denatured alcohol Formula No. 40, of amendments to specifications for one of these denaturants, quassin, of authorization of substitute denaturants for specially denatured alcohol Formula No. 36, and of authorization for additional uses of specially denatured alcohol Formula No. 36.

Background. The critical shortage of brucine has caused serious problems for producers and users of specially denatured alcohol Formula No. 40. Previous attempts to solve these problems have not been entirely satisfactory. In order to alleviate the difficulties of denaturers and users, certain other variations concerning the production and use of specially denatured alcohol have been authorized.

Authorization of Variations. As an emergency measure in accordance with the provisions of 26 CFR 212.15 and 212.65, the following variations are authorized:

Formula No. 36

17.5 pounds of caustic soda, liquid grade, containing 50% sodium hydroxide by weight or 12.0 pounds of caustic soda, liquid grade, containing 73% sodium hydroxide by weight may be substituted for the prescribed 3 gallons of strong ammonia solution, U.S.P., now required to be added to each 100 gallons of ethyl alcohol. Basic data concerning caustic soda are as follows:

Basic Data

Caustic Soda, Liquid

The liquid caustic soda may consist of either 50% or 73% by weight sodium hydroxide in aqueous solution. The amount of caustic soda used shall be such that each 100 gallons of ethyl alcohol will contain not less than 8.76 lbs. of sodium hydroxide, anhydrous basis.

Color. A 2% solution of the sodium hydroxide in water shall be water-white.

Purity. The sodium hydroxide content of the caustic soda solution shall be determined by the following procedure:

Accurately weigh two grams of liquid caustic soda into a 100 ml. volumetric flask, dissolve, and dilute to the mark with distilled water at room temperature.

Transfer a 25 ml. aliquot of the solution to a titration flask, add 10 ml. of 1% barium chloride solution, 0.2 ml. of 1% phenolphthalein indicator, and 50 ml. of distilled water. Titrate with 0.25 normal hydrochloric acid to the disappearance of the pink color. Not less than 25 ml. of hydrochloric acid shall be required to neutralize the sample of diluted 50% caustic soda, and not less than 36.5 ml. of hydrochloric acid shall be required to neutralize the sample of diluted 73% caustic soda.

1 ml. of 0.25 N hydrochloric acid = 0.01 g. of sodium hydroxide (anhydrous).

Additional Authorized Uses: (1) As a solvent:

141. Shampoos.
142. Soap and bath preparations.
450. Cleaning solutions (including household detergents).

(2) As a raw material:

579. Other chemicals.

Formula No. 40

In addition to the previously approved quantities of denaturants, the following quantities may be used:

To every 100 gallons of ethyl alcohol, add 1 1/2 avoirdupois ounces of brucine (alkaloid), brucine sulfate, N.F. IX, or quassin and 1/8 gallon of tert-butyl alcohol.

Amended Basic Data For Quassin

Optical Assay

When 1 gram of quassin, denaturing grade, is dissolved in 10,000 ml. of water, the absorbance of the solution in a 1 cm. cell at a wavelength of 258 millimicrons shall be not less than 0.400 (for convenience of solution initially dissolve the quassin in a small amount of 95% alcohol).

Inquiries. Inquiries regarding this industry circular should refer to its number and be addressed to the office of your assistant regional commissioner (alcohol and tobacco tax).

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